GREATEST IRON FIELD IN THE WORLD

Two counties of Utah contain greater deposits of iron ore than Pennsylvania, famed the world over for its production of such ore, and when the iron industry of Utah is developed it will produce iron and its products in greater quantities than Pennsylvania ever produced or ever will produce.

This is not mere idle assertion. It is the deliberate judgment of iron experts from Pennsylvania and other eastern iron regions who have visited the localities where Utah's iron ore deposits are located, and who have made a detailed examination of those deposits.

The two counties which contain these deposits are Iron and Washington counties, in the southwestern corner of Utah. Plans for developing these immense deposits are maturing rapidly, and the time is not far distant when Utah will rank first among the states of the Union in its production of iron ore.

To Develop the Industry.

The Colorado Fuel & Iron company, a corporation controlled by the Rockefeller interests, has acquired immense holdings of iron ore bodies in Iron county. The ore here is found on the surface in conical peaks or ridges—literally mountains of iron ore. This ore runs from 45 to 60 per cent of iron, and about 3,000,000 tons of the ore are in sight.

These same interests control the Rio Grande Western railway system. Transportation, of course, is the first essential factor in the development of the iron industry, as it is indeed in the development of every other large industry. And the Gould-Rockefeller interests, to supply this element, are planning an extension of their railway system into the field where are located their tremendous iron interests.

Will Extend Rio Grande.

Their plan, as generally understood, is to build a branch line starting at Farnham on the main line of the Rio Grande Western road, thence through Castle valley, touching at Castledale, Ferron and other points; thence through the Salina canyon to the southern terminus of the Sanpete branch of the Rio Grande. From this point, Marysvale, several surveys have been made for the extension of the road, all of them having for the ultimate objective the section where the Colorado Fuel & Iron company has its iron holdings.

The plan of the company is to establish a blast furnace at some point on the Rio Grande road, probably at Green River, Utah, where it will make pig iron and possibly steel billets, and then carry this product to its main iron and steel works at Pueblo, Colo., where it will be manufactured into steel rails, structural steel and other finished iron products.

Product Is Needed Badly.

To show the necessity for the development of the Utah iron fields it need only be cited that for two or three years past the Colorado Fuel & Iron company has been buying iron ore from the Mesaba range in Minnesota and transporting the crude ore to its works at Pueblo at a heavy cost in transportation charges, to be treated there.

With the development of its Utah properties the company will be able to transport its own ore a comparatively short distance over a railway line controlled by itself—or rather by the same men who control the fuel and iron company—then reduce it to pig iron, and, when that is done, carry it over the same railroad to its main works at Pueblo, where it can be manufactured into the finished product.

Men in a position to state facts accurately say that the extension of the Rio Grande Western railroad into the Iron Mountain district is a matter of only a short time comparatively speaking.

Another Road Into District.

But this is not the only railroad which will build into the Iron Mountain district. The San Pedro, Los Angeles & Salt Lake road, which was completed early last year, will eventually build a branch into the district from its main line. This road will probably have its beginning at Lund, one of the stations on the main line, and will be much shorter, and will involve much less railroad construction than the promised extension of the Rio Grande Western system by the Gould-Rockefeller interests.

The construction of this branch has been promised by President W. A. Clark, to be carried out when the time is ripe.

Market in the Orient.

One of the chief, if not the greatest market for Utah iron and its finished products, will be in the rOient. In this connection the building of the San Pedro, Los Angeles & Salt Lake road has been an untold blessing to the yet unborn iron industry of Utah. That road extends from Salt Lake to San Pedro harbor on the Pacific caoast. It was built through what is now a desert. One of the chief objects which Senator Clark and his associates had in mind in building it was the fact that along its route and tributary thereto were untold deposits of the richest minerals known to the mining and industrial world. The prosperity of the road depends in large measure upon the development of those industries, one of the chief of which is the now undeveloped iron industry of southern Utah.

The western terminus of the San Pedro, Los Angeles & Salt Lake road—or, as it is known, the "Salt Lake Route"—is San Pedro harbor, one of the best harbors on the Pacific coast. The daring minds who conceived the idea of building the Salt Lake road through the desert are also projecting a line of steamships between San Pedro harbor and the Orient, and it is on that line of steamships that the Utah iron product will be conveyed to the land of the setting sun.

This is not a dream. There were those who predicted that the railroad through the desert from Salt Lake to San Pedro harbor would never be built. But it has been built; and the interests of the men who built it are indissolubly bound up in developing the resources of the country which it traverses, and in finding a market for the product of those resources. That market is the Orient.

Japanese Natural Ironmongers.

The Japanese are the natural ironmongers of the Orient. At present they depend for their supply of iron ore upon the mines of Korea and of portions of China. It is a fact known to iron experts the world over, however, that the ore of Korea and China is of an inferior quality; and, with the tremendous strides which the Japanese are making in every industry and art known to civilization, it follows as a matter of course that they must find a product of superior quality.

All this has been figured out by the captains of industry who are interested in the development of the Utah iron industry. They see that eventually the Japanese must exercise their skill as ironmongers upon an American iron product, and the Utah product is nearer by thousands of miles than any other considerable body of iron ore in the United States, and transportation charges are less in proportion to the distance to be traversed.

Will Buy American Pig Iron.

Reduced to its last analysis this means that when the Utah iron fields are developed, the Japanese will buy Utah pig iron and steel billets; that it will be transported to Japan in American vessels from San Pedro harbor, and that the little brown men, to whose greatness the world is just awakening, will utilize this crude product in the manufacture of their own steel rails, their own structural steel and their own iron and steel products of every kind and character. There is no doubt that immense works to turn out finished steel products will be erected in Utah also.

In this article space cannot be devoted to a panegyric upon the future of the Orient, but the student of world affairs realized long ago that what was once the old world is now the new; that where civilization started ages ago, civilization is today making its greatest strides; that one of the chief fields for industrial development of the new century upon which mankind has barely entered is to be found in the lands which were the original habitat of the human race.

And so Utah crude iron products will find a market not alone in Japan, but the finished products of these same Utah iron mines will find markets in other portions of the Orient. Human experience has shown that human power to develop countries that, to the eye of inexperience seem barren and sterile, is practically unlimited, and, with the establishment of steamship lines from San Pedro to the Orient, will come an era when the products of Utah's iron fields will penetrate to the uttermost corners of the far east.

Have Field to Itself.

No man familiar with the iron industry in America needs to be told that, with the Utah iron products developed, Utah will enjoy practically a monopoly of the Oriental iron trade. It is a fact which any person sufficiently interested can demonstrate by even the most casual inquiry, that the Utah product can be sold much cheaper in the Orient than the product of the eastern states.

It is a fact that steel rails and other Utah iron products, if manufactured in sufficiently large quantities, can be laid down on the Pacific coast at a cheaper figure than the first cost of such products in Pittsburg and other eastern iron centers, and, when the cost of transportation from these eastern centers across the continent to the Pacific coast is taken into consideration, the advantage which will be enjoyed by Utah iron operators is apparent to everyone.

Market on Pacific Coast.

But it is not alone in the Orient that the product of the Utah iron mines will find a market. This is an era of railroad building on the Pacific coast. Roads and branch roads are being constructed by the great railway systems into the uttermost parts of the American west. Communities hitherto isolated are being brought into touch with the world through the genius of the captains of industry who are building up the west. Prophetic vision itself cculd not foretell the railroad extensions of the next fifty years in this western country.

This era of railroad building means an enormous market for steel rails and other iron products. It has been pointed out how western manufactured iron products can outsell the eastern product in the Orient, and by the same token the west can outsell and underbid the east in the markets of the western states.

The iron industry is a stable one. The demand for iron products follows the advance of civilization and of development. Those who have witnessed the development of the Pacific coast country in the past quarter century dare not predict what the development of the future will be. It defies the imagination of man, but with every day of development will come an increased demand for the products which Utah has in such abundance, the market for which cannot be captured by the states of the far east.

The former part of this article dealt entirely with the iron resources of the Iron Mountain region in Iron county; but that is not all of the Utah iron fields. In Washington county—in what is known as the "Bull Valley" region—are other vast deposits of iron ore yet untouched.

The iron fields of Utah are virgin fields. The vast fortunes which iron men of Pennsylvania and other states have built up are what the future holds in store for those who uncover to the world the iron resources of Utah. Nor will the prosperity come alone to the operators; it will come to untold thousands of workingmen whose services will be necessary to the development of the industry; it means that here in Utah will be built up a state of wage-workers like unto the great states of the east which were pioneers in the industry.

Cost of Iron Plant.

A noted eastern iron expert who visited Utah and examined into her resources of iron ore, estimated that an investment of $15,000,000 in the industry here would net an annual profit of 20 per cent, with a probable profit of 60 per cent on steel rails. A synopsis of his figures on the establishment of an iron plant follows:

425 Otto Hoffman by-product coke ovens, at $5,000 each	$ 2,125,000
Four 600-ton blast furnaces, $1,000,000 each	4,000,000
Rail mill, comprising Bessemer works, blooming mill and rail mill, capacity 2,000 tons daily	2,000,000
Electric railroad for assembling materials	525,000
Opening ore properties	250,000
Cost of townsite and water power	125,000
Offices, laboratory, machine shops, houses for men, etc.	500,000
Cost of ore property	2,500,000
Cost of coal property	335,000
Working capital	2,500,000
Total	$15,100,000

If beehive ovens were built at coal mines the investment would be $1,600,000 less.

Cost Per Ton of Making Bessemer Pig Iron in Utah.

(Based on making coke at coal mines in beehive ovens.)

Two thousand pounds of coke	$1 25
Freight on same	1 20
Ore delivered at plant, 1 2-3 tons at 75 cents	1 25
	$3.70
One-half ton of limestone, at 60 cents	30
Labor, incidentals, salaries, repairs, renewals and replacements	1 50
Total	$5 50

The cost per ton of making Bessemer pig iron in Utah, based on making coke at works with by-product ovens, is $2.47.

Making Rails in Utah.

Cost of rails, based on Bessemer pig at $6 and $7 for conversion into rails, $13.
Selling price at works, $28.
Profit per ton, $15.
About 600,000 tons of rails at this figure would yield a profit of $9,000,000.

COAL MINES YIELD ENORMOUS OUTPUT

Utah contains probably more unmined coal than any other state in the Union. The importance of this resource of the state is emphasized when considered in connection with the iron resources described elsewhere in this issue; for it guarantees an unlimited fuel supply necessary to developing the immense iron resources.

The coal production of Utah for 1905, according to figures furnished by the state coal inspector, was 1,592,943 tons, divided as follows among the various coal mining camps:

Winter Quarters	256,550
Clear Creek	304,025
Castle Gate	243,556
Sunnyside	639,934
Grass Creek	40,561
Wasatch	34,967
Other small mines (estimated)	75,350

Has 7,000 Square Miles.

Professor Marcus Jones says that Utah has 7,000 square miles of coal land. He says:

"Geologically, our coals belong to the cretaceous age. After the basin was upheaved in which the coal was formed a large lake was left in the center, the waves of which gradually wore away the shores until the coal deposits cropped out in precipices 1,500 feet high. The streams also cut box canyons at right angles to the shore line, thereby exposing the nearly horizontal coal beds in multitudes of places, so that to take out coal it is necessary only to run a tunnel in on the bed and cart out the fuel. This does away with all the costly hoisting machinery so common elsewhere.

"This coal belt enters Utah near Evanston, Wyo., forms a large basin near Coalville, then runs east along the north side of the Uintahs to and around the eastern end of the mountains; thence west back along the south side to the head of Spanish Fork canyon, where it forms the coal range, the watershed between the Colorado and the great basin, whence it runs in a southerly direction for many miles, and then bends westward past Cedar City (near which are the iron deposits) and Kanarra, thence west until it passes out of the state above St. George. In the southwestern part of the state the deposits are small, while between Iron City and the Uintahs they are very heavy.

Supply for Centuries.

"This coal field, 600 to 1,000 miles long, is ten miles wide in the narrowest place, while in others it may run up to twenty-five miles. It is estimated that we have 20,000 square miles of coal lands in Utah, but this is an exaggeration; still we have immense bodies of thousands of square miles, and of such thickness as to supply the United States for centuries. There is no coal to the west of Utah except some poor lignites, scarcely used, in southern California; so we shall always supply the great basin, and at least part of California, with coal. At Coalville the workable vein is ten to thirteen feet thick; at Pleasant Valley there are two veins, one thirteen and the other twenty-eight feet thick; at Castle Gate the largest vein is fourteen feet."

It is a fact well known to coal experts that the Utah coal is splendid coking coal, and this fact is of the highest importance when considered in relation to the tremendous prospective iron industry of the state. Not only is it good coking coal, but it lies in close proximity to the iron fields, and thus the question of transporting the coal to the iron works which will be built in the future is not a serious one.

Has Big Outside Supply.

But Utah, large as her coal possibilities are, does not have to depend upon them alone for its fuel supply. The Oregon Short Line, through its connection with the Union Pacific, brings coal to Salt Lake from Rock Springs, Wyo., and on the Short Line proper are the big coal mines at Kemmerer, Cumberland and Red Canyon, all in Wyoming.

The assurance that the Burlington road will be built into Salt Lake from Guernsey, Wyo., means that new coal mines in Carbon and Uinta counties in Wyoming will be opened to the Salt Lake coal market, and the Denver & Northwestern road, now being built by David H. Moffat from Denver to Salt Lake, will furnish an additional supply from Routt county in western Colorado.

Big Market for Product.

The development of the Utah coal mines thus far has been extensive enough only to supply the Utah market, and to compete with the Wyoming mines in the adjacent inter-mountain country; but as it increases it is easy to see that the market will be widely extended.

San Francisco and adjacent territory now consume over 2,000,000 tons of coal annually from Puget Sound, Coos Bay, England, Wales and Australia. The Western Pacific road now being built from Salt Lake to San Francisco, is controlled by the same interests which own coal mines at Winter Quarters, Clear Creek, Castle Gate, and Sunnyside, in Utah. These mines, together with the Rio Grande and Western Pacific railroads, are owned by the Gould-Rockefeller interests, who naturally will seek, when their road is completed, to extend their coal market to the coast.

The question of a coal supply is as serious on the Pacific coast that steamships are accustomed to bring coal in ballast from Australia, England and Wales in order to be assured of a supply on the return trip. That this difficulty will be obviated when the Utah coal fields are developed goes without saying.

The Salt Lake road—from Salt Lake to Los Angeles and San Pedro harbor—is naturally interested in the building up of the Utah coal industry, and the completion of that road meant cheap freight rates for Utah coal to tidewater whenever the industry should be developed.

Market in South America.

It is a fact known to men familiar with the coal situation that the coal mines of the Pacific slope now furnish practically all the coal that is consumed on the coast—save what comes from abroad—from Sitka, Alaska, to Chile. That these mines are inadequate for such a supply is well known, and they cannot continue to enjoy this monopoly now that Salt Lake is to be connected with San Francisco and with Los Angeles by two new railroads, one of which is already built and the other of which is being built as fast as possible.

But Utah alone will be able to consume in a few years an enormous quantity of coal in the development of its iron industry elsewhere described. One steel plant with a capacity of 2,000 tons a day will use 1,460,000 tons of coal in a year, and the building of steel plants in Utah is a mere matter of time, considering its vast iron resources.

The development of the coal and iron industries are bound to go ahead in hand, and their development means that Utah will become one of the greatest, if not in time the greatest, industrial states of the union.

PROPER ECONOMY.

(Denver Post.)

The man in a down-town cheap restaurant had eaten but half of his piece of mince pie. He didn't care for the rest and pushed the plate aside. The waitress came along at that point and began to remove the dishes from the table. The man felt like talking.

"It looks like a waste to throw all that pie away," he said.

"Oh, it won't be wasted," said the girl.

"What will they do with it?"

"It'll go into the hash along with 'most everything else," was the matter-of-fact reply.